

In the Claims:

1. (Currently Amended) A modular electronic system comprising:  
a substrate;  
a ground plane in said substrate;  
a semiconductor chip;  
means for powering said chip;  
means for capacitively signalling between said chip and said substrate; and  
signal leads connected on said substrate and said chip to said means for  
capacitively signalling.

Claims 2-27. Canceled.

*20* 28. (Currently Amended) An electronic system comprising:  
a semiconductor chip;  
a substrate;  
a ground plane in said substrate;  
a plurality of electronic devices implemented on said chip, a signal lead of at  
least one of said plurality of electronic devices coupled to a first half-capacitor attached to  
said chip; and,  
a second half-capacitor attached to said substrate and capacitively coupling a  
signal to said first half-capacitor.

Claims 29-36. Canceled.

*2* 37. (Original) A modular electronic system as defined in claim 1 wherein said  
means for capacitively signalling comprises first and second coupled half-capacitors, said  
first half-capacitor being associated with said chip and said second half-capacitor being  
associated with said substrate, said first and second coupled half-capacitors comprising  
effectively overlapping conductive regions separated by a gap.

*3* 38. (Original) A modular electronic system as defined in claim *37* wherein at  
least one of said conductive regions comprises a plate.

*4* 39. (Original) A modular electronic system as defined in claim *37* wherein the  
capacitance of said means for capacitively signaling can be varied by changing the effective  
area of overlap between said conductive regions.

*11* 40. (Original) A modular electronic system as defined in claim *37* wherein  
portions of said chip are passivated, but not said first half-capacitor.

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41. (Original) A modular electronic system as defined in claim 37 wherein  
said gap is at least partially filled with a dielectric.

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42. (Original) A modular electronic system as defined in claim 41 wherein  
said dielectric comprises a uniform material.

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43. (Original) A modular electronic system as defined in claim 41 wherein  
said dielectric accommodates mechanical guides.

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44. (Allowed) A modular electronic system comprising:  
a substrate;  
a chip;  
means for powering said chip;  
means for capacitively signaling between said chip and said substrate  
comprising first and second coupled half-capacitors, said first half-capacitor being associated  
with said chip and said second half-capacitor being associated with said substrate, said first  
and second coupled half-capacitors comprising effectively overlapping conductive regions  
separated by a gap that is at least partially filled with a dielectric; and  
a power connector extending through said dielectric.

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45. (Original) A modular electronic system as defined in claim 41 further  
including passivation distinct from said dielectric.

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46. (Previously Amended) A modular electronic system as defined in claim  
45 wherein said dielectric has a substantially greater dielectric constant than does said  
passivation.

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47. (Original) A modular electronic system as defined in claim 41 wherein  
said dielectric is bonded to said substrate.

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48. (Original) A modular electronic system as defined in claim 41 wherein  
said dielectric provides a means for affixing said chip to said substrate.

Claims 49-51. Canceled.

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52. (Currently Amended) A modular electronic system comprising: as defined in  
claim 1  
a substrate;  
a semiconductor chip;  
means for powering said chip;  
means for capacitively signalling between said chip and said substrate; and

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signal leads connected on said substrate and said chip to said means for capacitively signalling:

wherein said means for capacitively signaling operates despite a substantial misalignment between said substrate and said chip.

53. (Previously Amended) A modular electronic system as defined in claim 39 further comprising a plurality of coupled half-capacitors, a substantial area of said chip and a substantial portion of the area of said substrate overlapping said chip being covered with substantially overlapping half-capacitors.

54. (Original) A modular electronic system as defined in claim 53 wherein at least one half-capacitor on said chip is connected to a chip ground, power, or other common reference signal.

55. (Original) A modular electronic system as defined in claim 53 wherein at least one half-capacitor on said substrate is connected to a substrate ground, power, or other common reference signal.

56. (Original) A modular electronic system as defined in claim 39 wherein the area of one of said conductive regions is greater than the area of the other of said conductive regions.

57. (Original) A modular electronic system as defined in claim 39 wherein the shape of one of said conductive regions differs from the shape of the other of said conductive regions.

58. (Original) A modular electronic system as defined in claim 39 wherein said first half-capacitor overlays circuitry.

59. (Currently Amended) A modular electronic system comprising:  
a substrate;  
a ground plane in said substrate;  
a chip;  
means for powering said chip;  
means for capacitively signaling between said chip and said substrate  
comprising first and second coupled half-capacitors, said first half-capacitor being associated with said chip and said second half-capacitor being associated with said substrate, said first and second coupled half-capacitors comprising effectively overlapping conductive regions separated by a gap; and  
an additional half-capacitor associated with one of said chip and said substrate.

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[Claims 60-101. Canceled.]

30 102. (Allowed) A modular electronic system comprising:  
a first module having a plurality of semiconductor electronic devices, a first  
half-capacitor and at least one signal lead connecting said electronic devices to said first half-  
capacitor;  
a second module having a second half-capacitor, said modules being  
positioned such that said first and second half-capacitors provide a capacitive signal path  
between said first and second modules; and  
contacts for supplying DC power to said first module from a source outside  
said first module.

[Claims 103-142. Canceled.]

31 143. (Allowed) A modular electronic system as defined in claim 102 wherein  
said first and second half-capacitors are shaped such that the admittance of said capacitive  
signal path is substantially unaffected by a small misalignment between said first and second  
modules.

32 144. (Allowed) A modular electronic system as defined in claim 102 wherein  
the area of one of said half-capacitors is greater than the area of the other of said half-  
capacitors.

[Claim 145. Canceled.]

33 146. (Allowed) A modular electronic system as defined in claim 102 wherein  
the shape of one of said half-capacitors differs from the shape of the other half-capacitor.

34 147. (Allowed) A modular electronic system as defined in claim 146 wherein  
said shape of said one of said half-capacitors is designed to accommodate anticipated  
misalignment.

[Claims 148-209. Canceled.]

19 210. (Original) A modular electronic system as defined in claim 1 further  
comprising a transmission line coupled to a first means for capacitively signalling.

20 211. (Original) A modular electronic system as defined in claim 210 wherein  
said transmission line is further coupled to a second means for capacitively signalling.

21 212. (Original) A modular electronic system as defined in claim 210 wherein  
said transmission line is further coupled to a conductive junction.

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*22* 213. (Original) A modular electronic system as defined in claim 210 wherein  
a first multiplicity of said means for capacitively signaling between said chip  
and said substrate occupies a first area at a first pitch,  
a second multiplicity of means for conductively signaling occupies a second  
area of said substrate at a second pitch,  
a multiplicity of said transmission lines connects said first and second areas,  
and  
said second area is larger than said first area. *19*

*23* 214. (Original) A modular electronic system as defined in claim 210 wherein  
a first multiplicity of said means for capacitively signaling between said chip  
and said substrate occupies a first area at a first pitch,  
a second multiplicity of means for conductively signaling occupies a second  
area of said substrate at a second pitch,  
a multiplicity of said transmission lines connects said first and second areas,  
and  
said second pitch is larger than said first pitch. *19*

*24* 215. (Original) A modular electronic system as defined in claim 210 wherein  
a first multiplicity of said means for capacitively signaling between said chip  
and said substrate occupies a first area at a first pitch,  
a second multiplicity of means for capacitively signaling occupies a second  
area of said substrate at a second pitch,  
a multiplicity of said transmission lines connects said first and second areas,  
and  
said second area is larger than said first area. *19*

*25* 216. (Original) A modular electronic system as defined in claim 210 wherein  
a first multiplicity of said means for capacitively signaling between said chip  
and said substrate occupies a first area at a first pitch,  
a second multiplicity of means for capacitively signaling occupies a second  
area of said substrate at a second pitch,  
a multiplicity of said transmission lines connects said first and second areas,  
and  
said second pitch is larger than said first pitch. *19*

*25* 217. (Allowed) A modular electronic system as defined in claim 102 including  
further paired half-capacitors such that said capacitive signal path is distributed among  
multiple capacitors. *30*

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36 218. (Allowed) A modular electronic system as defined in claim 102 wherein said first module is positioned relative to said second module by motion transverse to said capacitive signal path.

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37 319. (Allowed) A modular electronic system as defined in claim 102 wherein said second module is a cable, said cable including at least one non-coaxial wire.

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220. (Allowed) A modular electronic system as defined in claim 102 wherein said first module further includes a transmission line that is connected to a plurality of transmission lines.

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221. (Allowed) A modular electronic system as defined in claim 102 further comprising means for varying the admittance of said capacitive signal path by changing the effective area of overlap between said half-capacitors. 29

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40 222. (Allowed) A modular electronic system as defined in claim 221 wherein said means for varying the admittance includes mechanical devices.

223. (Currently Amended) A modular electronic system comprising:

a substrate;

a ground plane supported by said substrate;

a semiconductor chip;

a first half-capacitor attached to said semiconductor chip;

a plurality of electronic devices implemented on said chip, a signal lead of at least one of said plurality of electronic devices coupled to said first half-capacitor, and

a second half-capacitor attached to said substrate and capacitively coupling a

signal to said first half-capacitor.

17.2 ~~225~~ (Original) The modular electronic system of claim 223 further comprising

11. *F* 24. (Original) The method of claim 11, further comprising contacts for supplying a DC power to said semiconductor chip from a source outside said chip.

contacts for supplying DC power to said semiconductor chip from a source outside the chip.

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4224. (Original) The modular electronic system of claim 223 further comprising contacts for supplying DC power to said semiconductor chip from a source outside said chip.

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